REMARKS

The office action suggests that the fact that transitions must occur specifically from the crystalline to the amorphous phase is not taught by the specification.

In this case, the claim in issue calls for optically programming a phase change memory after electrically programming it. The optical programming generally causes a crystalline to amorphous change. Electrical programming is used for going from amorphous to crystalline phases. Necessarily, to be useable, the memory must be reprogrammed. Once it has been put in the crystalline phase by electrical programming, it cannot be reprogrammed unless it is transitioned back to the amorphous phase. This, necessarily, involves optically programming after electrical programming in order to make a useful memory.

This is all supported by the specification. The cells must be set and reset before programming. See page 7, lines 19 to page 8, line 1. If there are set or reset, that means they must be crystalline or amorphous and in order to get them from the crystalline to the amorphous stage, light programming would be done after electrical programming.

Similarly, at page 1, lines 4-12 it is explained that "phase change memories use phase change materials, i.e. materials that may be electrically switched between a generally amorphous and a crystalline state." If this is so, then it is necessary to switch them from crystalline to amorphous by light programming after electrical programming in some cases. Therefore, there is support necessarily within the specification.

In the same vein, at page 1, line 19 it is explained that the phase change memories are reprogrammed. If they are reprogrammed, they must be changed from crystalline to amorphous or amorphous to crystalline. This necessarily involves that crystalline to amorphous transitions be done by optical programming.

In short, to be workable, the memory must be able to be transitioned between crystalline and amorphous phases. If it is electrically transitioned to the crystalline phase, then sometimes it must be transitioned to the amorphous phase. From all of the material set forth in the specification, this is clearly required.

Therefore, reconsideration is requested.

Respectfully submitted,

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